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The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20

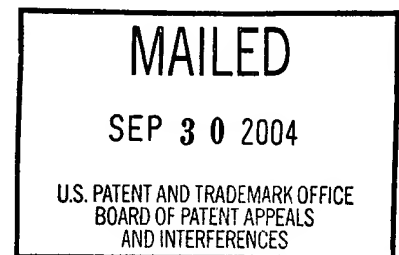
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

***Ex parte*** RICHARD FRANCIS AVERILL, JON EISENHANDLER,  
and NORBERT ISRAEL GOLDFIELD

Appeal No. 2003-1734  
Application No. 09/302,336

ON BRIEF



Before BARRETT, RUGGIERO, and GROSS, ***Administrative Patent Judges.***  
GROSS, ***Administrative Patent Judge.***

***DECISION ON APPEAL***

This is a decision on appeal from the examiner's final rejection of claims 1 through 8, 10, and 12. Claims 9 and 11 have been allowed.

Appellants' invention relates to a method of creating a classification system for rating the nature and severity of health care requirements. The method takes into consideration the type of disease, the severity and persistence of the disease, and the severity of an individual's illness. Claim 1 is illustrative of the claimed invention, and it reads as follows:

Appeal No. 2003-1734  
Application No. 09/302,336

1. A method of creating a classification system for rating the nature and severity of health care requirements, characterized by:

- (a) obtaining a set of medical care codes;
- (b) categorizing the medical care codes into major disease categories;
- (c) categorizing the medical care codes into episode disease categories based on the severity and persistence of the disease, and assigning each episode disease category to a major disease category; and
- (d) sub-dividing at least some of the episode disease categories by severity of illness, wherein the classification system is applied to historical information for individuals and populations to group them according to the classification system.

The prior art reference of record relied upon by the examiner in rejecting the appealed claims is:

"From Diagnosis Codes to Diagnostic Cost Groups": Obtained from [www.dxcg.com](http://www.dxcg.com) (2001). (DCXG Document)

Claims 1 through 8, 10, and 12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by DCXG Document.

Reference is made to the Examiner's Answer (Paper No. 18, mailed March 6, 2003) for the examiner's complete reasoning in support of the rejection, and to appellants' Brief (Paper No. 16, filed January 13, 2003) for appellants' arguments thereagainst.

#### **OPINION**

As a preliminary matter, we note that appellants indicate on page 4 of the Brief that the claims all stand or fall together.

Appeal No. 2003-1734  
Application No. 09/302,336

Accordingly, we will treat the claims as a single group with claim 1 as representative.

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will affirm the anticipation rejection of claims 1 through 8, 10, and 12.

Appellants argue (Brief, page 5) that "there is a fundamental distinction between the Hierarchical Coexisting Conditions (HCC) disclosed at DXCG.com and the claims of the present invention." Appellants continue, "The severity categorization used by HCCs refers to the relationship between different diseases within a common body system rather than distinctions made within a specific disease, as is claimed in the present invention." However, like the examiner (Answer, page 5) we find no such language in representative claim 1. Similarly, appellants contend (Brief, page 5) that "[t]he Clinical Risk Groups (CRGs) severity adjustment of the present invention refers to the severity of illness leveling matrix that has no HCC counterpart." Again we find no such language in claim 1.

Appellants contrast the Hierarchical Coexisting conditions (HCC) of the reference with "the present invention creates a comprehensive set of risk groups which in particular explicitly

Appeal No. 2003-1734  
Application No. 09/302,336

identifies groups of individuals with multiple interacting co-morbid conditions, and which explicitly identifies the severity of illness level." Once again the language that appellants argue distinguishes over the reference fails to appear in the claims. Accordingly, we will sustain the anticipation rejection of claim 1 and the claims grouped therewith, claims 2 through 8, 10 and 12.

In accordance with 37 C.F.R. § 1.192(a), arguments not included in the brief are considered waived. *See also, In re Berger*, 61 USPQ2d 1523, 1529 (Fed. Cir. 2002) and *Interactive Gift Express, Inc. v. CompuServe*, 256 F.3d 1323, 1344, 59 USPQ2d 1401, 1417 (Fed. Cir. 2001), in which the Federal Circuit held that issues not raised in the Brief are waived.

Appeal No. 2003-1734  
Application No. 09/302,336

**CONCLUSION**

The decision of the examiner rejecting claims 1 through 8, 10, and 12 under 35 U.S.C. § 102(b) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

**AFFIRMED**

*Joseph F. Ruggiero*

JOSEPH F. RUGGIERO  
Administrative Patent Judge

*Anita Pellman Gross*

ANITA PELLMAN GROSS  
Administrative Patent Judge

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) INTERFERENCES  
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BARRETT, *Administrative Patent Judge*, concurring.

I agree with the majority's decision on the rejection, but write separately to express my opinion that claims 1-8, 10, and 12 are also unpatentable because they are directed nonstatutory subject matter under 35 U.S.C. § 101.

***Legal background***

The Constitution authorizes Congress "To promote the Progress of . . . useful Arts, by securing for limited Times . . . Inventors the exclusive Right to their . . . Discoveries." U.S. Const., art. I, § 8, cl. 8. "This qualified authority . . . is limited to the promotion of advances in the 'useful arts.'" *Graham v. John Deere Co.*, 383 U.S. 1, 5, 148 USPQ 459, 462.

(1966). "[T]he present day equivalent of the term 'useful arts' employed by the Founding Fathers is 'technological arts.'"

*In re Bergy*, 596 F.2d 952, 959, 201 USPQ 352, 359 (CCPA 1979), *aff'd sub nom. Diamond v. Chakrabarty*, 447 U.S. 303, 206 USPQ 193 (1980). The "useful arts" have been defined by Congress as a "process, machine, manufacture, or composition of matter," 35 U.S.C. § 101. "These terms may not be read in a strict literal sense entirely divorced from the context of the patent law." *In re Alappat*, 33 F.3d 1526, 1553, 31 USPQ2d 1545, 1565 (Fed. Cir. 1994) (en banc) (C.J. Archer, concurring in part and

Appeal No. 2003-1734  
Application No. 09/302,336

dissenting in part), citing, *inter alia*, *In re Schrader*,  
22 F.3d 290, 295-96 & n.11, 30 UPSQ2d 1455, 1459-60 & n.11 (Fed.  
Cir. 1994).

**A "process" requires a physical transformation**

The most difficult category to define is a "process." A  
"process" is broadly defined in the dictionary as "a series of  
actions or operations conducing to an end." **Webster's New  
Collegiate Dictionary** (G.&C. Merriam Co. 1977). Any series of  
actions or operations is a process within the dictionary  
definition. However, not every process in the dictionary sense  
is a patentable "process" under §§ 100(b) and 101 within the  
"useful arts" ("technological arts"). **See Parker v. Flook**,  
437 U.S. 584, 588 n.9, 198 USPQ 193, 196 n.9 (1978) ("The  
statutory definition of 'process' is broad.... An argument can  
be made, however, that this Court has only recognized a process  
as within the statutory definition when it either was tied to a  
particular apparatus or operated to change materials to a  
'different state or thing.'"); *In re Musgrave*, 431 F.2d 882, 893,  
167 USPQ 280, 289-90 (CCPA 1970) (a series of operational steps  
must be in the technological arts to be a statutory process);  
John Hogg Austin, **The Patentable Invention**, 18 J. Pat. Off.  
Soc'y 738, 748 (1936) ("The statutory classification, considered

in its totality, limits 'art' ['process'] by interpretation to the industrial methods of the artisan according to the general character of the other three classes."); A.H. Walker, *The Law of Patents* § 3 (5th ed., Baker, Voorhis & Co. 1917) ("The word 'art' also has a narrower meaning in the patent laws than it has in the dictionaries. In the latter its significance is 'the use of means to produce a result.' In the patent laws it covers only a certain limited meaning of the word process.").

"When Congress approved the addition of the term 'process' to the categories of patentable subject matter in 1952, it incorporated the definition of 'process' that had evolved in the courts" (footnotes omitted), *Schrader*, 22 F.3d at 295, 30 UPSQ2d at 1459, which included this definition from *Cochrane v. Deener*, 94 U.S. 780, 787-788 (1888): "A process is . . . an act, or series of acts, *performed upon the subject matter to be transformed and reduced to a different state or thing*" (emphasis added). The "subject matter" transformed need not be a physical (tangible) object or article or substance, but could be physical, yet intangible, such as electricity or electromagnetic waves. *See In re Ernst*, 71 F.2d 169, 170, 22 USPQ 28, 29-30 (CCPA 1934); *In re Prater*, 415 F.2d 1378, 1388, 159 USPQ 583, 592 (CCPA 1968) (in the Telephone Cases, 126 U.S. 1 (1887), Bell's fifth claim to



Appeal No. 2003-1734  
Application No. 09/302,336

a process of transmitting sounds telegraphically by changing the intensity of a continuous electrical current was held valid and infringed); **Schrader**, 22 F.3d at 295, 30 UPSQ2d at 1459-60 (noting imperfect statements requiring object or article in 1 William C. Robinson, **The Law of Patents for Useful Inventions** § 159 (1890) and **Gottschalk v. Benson**, 409 U.S. 63, 175 USPQ 673 (1972), and stating that "it is apparent that changes to **intangible** subject matter representative of or constituting physical activity or objects are included in this definition"). Therefore, I conclude that the test for a statutory "process" under 35 U.S.C. § 101 is transformation of physical subject matter (tangible or intangible) to a different state or thing.

The Federal Circuit has stated that a "'physical transformation' ... is not an invariable requirement, but merely one example of how a mathematical algorithm may bring about a useful application," **AT&T v. Excel Communications, Inc.**, 172 F.3d 1352, 1358, 50 USPQ2d 1447, 1452 (Fed. Cir. 1999). However, the court noted that "the claims require the use of switches and computers," *id.* at 1355, 50 USPQ2d at 1449, and transformation of data by a machine inherently requires a physical transformation of electrical signals. Thus, the statement in **AT&T** is dicta. Transformation of data by a machine

is a special case. The court in *AT&T* might have been saying that statutory subject matter does not require "physical transformations" performed externally to the machine, such as using the calculated results to control a system. *Cf. State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1375, 47 USPQ2d 1596, 1602 (Fed. Cir. 1998) (Claim 1 is "statutory subject matter, even if the useful result is expressed in numbers, such as price, profit, percentage, cost, or loss.").

**"Abstract idea" exception**

"Congress intended statutory subject matter to 'include anything under the sun that is made by man.'" *Diamond v. Diehr*, 450 U.S. at 182, 209 USPQ at 6. "This Court has undoubtably recognized limits to § 101 and every discovery is not embraced within the statutory terms. Excluded from such patent protection are laws of nature, physical phenomena and abstract ideas." *Id.* at 185, 209 USPQ at 7. A claim that covers any and every possible way that the steps can be performed is a disembodied "abstract idea" because there is no particular implementation of the idea. *See Gottschalk v. Benson*, 409 U.S. at 68, 175 USPQ at 675 (The Supreme Court discussed the cases holding that a principle, in the abstract, cannot be patented and then stated:

"Here the 'process' claim is so abstract and sweeping as to cover both known and unknown uses of the BCD to pure binary conversion. The end use may ... be performed through any existing machinery or future-devised machinery or without any apparatus.").

***The test in State Street and AT&T is limited  
to machines and machine-implemented processes***

The two recent Federal Circuit decisions in *State Street* and *AT&T* state that the transformation of data *by a machine* constitutes statutory subject matter if there is a "practical application, i.e., 'a useful, concrete and tangible result.'" *State Street*, 149 F.3d at 1372, 47 USPQ2d at 1600-01. *State Street* and *AT&T* required transformation of data by a machine before it applied the "useful, concrete and tangible" test. As discussed in *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601:

In *Alappat*, we held that data, *transformed by a machine* through a series of mathematical calculations to produce a smooth waveform display on a rasterizer monitor, constituted a ***practical application*** of an abstract idea (a mathematical algorithm, formula, or calculation), *because it produced "a useful, concrete and tangible result" – the smooth waveform.*

Similarly, in *Arrhythmia Research Technology Inc. v. Corazonix Corp.*, 958 F.2d 1053, 22 USPQ2d 1033 (Fed. Cir. 1992), we held that the ***transformation*** of electrocardiograph signals from a patient's heartbeat *by a machine* through a series of mathematical calculations constituted a ***practical application*** of an abstract idea (a mathematical algorithm,

Appeal No. 2003-1734  
Application No. 09/302,336

formula, or calculation), *because it corresponded to a useful, concrete or tangible thing – the condition of a patient's heart.*

Today, we hold that the *transformation of data*, representing discrete dollar amounts, *by a machine* through a series of mathematical calculations into a final share price, constitutes a *practical application* of a mathematical algorithm, formula, or calculation, *because it produces "a useful, concrete and tangible result" – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.* [Emphasis added.]

The Federal Circuit stated in *AT&T*, 172 F.3d at 1358, 50 USPQ2d at 1452:

As previously explained, AT&T's claimed process employs subscribers' and call recipients' PICs as data, applies Boolean algebra to those data to determine the value of the PIC indicator, and applies that value *through switching and recording mechanisms* to create a signal useful for billing purposes. . . .

. . . It is clear from the written description of the '184 patent that AT&T is only claiming a process that uses the Boolean principle in order to determine the value of the PIC indicator. The *PIC indicator represents information about the call recipients's PIC, a useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC's subscriber.* Because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortably falls within the scope of § 101. [Emphasis added.]

Thus, *State Street* and *AT&T* were directed to machines or machine-implemented processes and address the special case of

Appeal No. 2003-1734  
Application No. 09/302,336

transformation of data by known machines. Machines inherently transform physical subject matter, such as electrical signals, to a different state or thing. Moreover, machines which take the place of human labor are generally considered to be in the "useful arts" ("technological arts"). *State Street* and *AT&T* do not hold that a "useful, concrete and tangible result" alone, without a machine, is sufficient for statutory subject matter.

### ***Analysis***

A statutory "process" is not limited to the means used in performing it. *See Cochrane v. Deener*, 94 U.S. at 787-88; *In re Prater*, 415 F.2d 1378, 1388, 159 USPQ 583, 592 (CCPA 1968) ("[A] process is not limited to the means used in performing it." (Emphasis omitted.)). As is typical with method claims, the means (structure) to perform the steps of the appealed claims are not recited. Nevertheless, it is clear that the steps in the claims on appeal do not transform any physical subject matter by physical chemical, electrical, or mechanical acts, but merely rearrange and categorize data or information. Accordingly, the claims fail to meet the transformation definition for a statutory "process."

No machine (such as programmed computer) is required, expressly or implicitly, to perform the steps. Thus, the

Appeal No. 2003-1734  
Application No. 09/302,336

"practical application, i.e., 'a useful, concrete and tangible result'" test of *State Street* and *AT&T* is not applicable under the present state of the law.

Assuming, *arguendo*, that the claims fall within the category of a "process" under § 101, the steps are so broadly recited, without regard to any tangible way of implementing them, that they are directed to the "abstract idea" itself and the claims are nonstatutory subject matter under the "abstract idea" exception. The abstract ideas comprising the steps are not instantiated into some specific physical implementation. Nor are there any minor physical acts, such as recording, that might be construed as an implementation of the abstract idea.

Although it is possible that the steps of the claims could be performed by a machine, such as a programmed computer, a machine is not required. Where a claim is broad enough to read on both statutory subject matter (machine implementation or physical transformation of physical subject matter) as well as nonstatutory subject matter (an abstract idea), the best position is to hold the claimed subject matter to be nonstatutory because, while a claim is pending and can be amended, a claim's meaning should be delimited by express terms rather than by claim interpretation. *Cf. In re Lintner*, 458 F.2d 1013, 1015, 173 USPQ 560, 562 (CCPA 1972) ("Claims which are broad enough to

Appeal No. 2003-1734  
Application No. 09/302,336

read on obvious subject matter are unpatentable even though they also read on nonobvious subject matter.").

For these reasons, I would hold the claimed subject matter to be nonstatutory under 35 U.S.C. § 101.

<i>Lee E. Barrett</i>	)	BOARD OF PATENT
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Administrative Patent Judge	)	AND
	)	INTERFERENCES

Appeal No. 2003-1734  
Application No. 09/302,336

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